

said nickel layer being made of Ni or a metal having Ni as its main component, by electroless plating; and

said gold layer being made of Au or a metal having Au as its main component.

5. The semiconductor device as set forth in Claim 4, wherein said gold layer has a thickness ranging from 0.003 μm to 1 μm .

6. The semiconductor device as set forth in Claim 1, wherein said protrudent electrode is formed so that said protrudent electrode has a part, which protrudes from said opening section, of a size greater than an area of said opening section.

7. The semiconductor device as set forth in Claim 1, wherein said main conductor layer is made of Cu or a metal having Cu as its main component.

8. An semiconductor device as set forth in Claim

1, further comprising:

9. The semiconductor device as set forth in Claim 8, wherein said barrier metal layer covers side surfaces of said main conductor layer.

10. An semiconductor device as set forth in Claim 1, further comprising:

a foundation metal layer made of Ti, Ti-W, Cr, or a metal having any of those elements as its main component, under said main conductor layer.

11. A manufacturing method of a semiconductor device, comprising the steps of:

forming a foundation metal layer on a semiconductor substrate on which formed are a plurality of electrode pads and a first insulating layer having first opening sections on said electrode pads;

forming a photosensitive first resist on said foundation metal layer;

forming, in said first resist, a plurality of first resist opening sections for exposing said

electrode pads;

forming a main conductor layer in said first resist opening sections;

removing said first resist;

removing said foundation metal layer by use of said main conductor layer as a photo mask;

forming a photosensitive second insulating layer so that said second insulating layer covers said first insulating layer and said main conductor layer;

forming second opening sections in regions of said second insulating layer, which covers the top surface of said main conductor layer, so that said main conductor layer is exposed therethrough;

forming a metal layer on main conductor layer in said second opening sections; and

forming protrudent electrodes on said metal layer.

12. A manufacturing method of a semiconductor device as set forth in Claim 11, further comprising the steps of:

enlarging said first resist opening sections by carrying out exposure by use of a mask pattern, after the step of forming said main conductor layer; and

forming a barrier metal layer in said enlarged first resist opening sections.

13. A manufacturing method of a semiconductor device as set forth in Claim 11, further comprising the step of:

forming a metal layer on said main conductor layer by electroless plating of a raw material different from said main conductor layer, after the step of removing said foundation metal layer.

14. A manufacturing method of a semiconductor device, comprising the steps of:

forming a foundation metal layer on a semiconductor substrate on which formed are a plurality of electrode pads and a first insulating layer having first opening sections on said electrode pads;

forming a photosensitive first resist on said foundation metal layer;

forming, in said first resist, a plurality of first resist opening sections for exposing said electrode pads;

forming a main conductor layer in said first resist opening sections;

removing said first resist;

removing said foundation metal layer by use of said main conductor layer as a photo mask;

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forming a second insulating layer so that said second insulating layer covers said first insulating layer and said main conductor layer;

forming a second resist on said second insulating layer;

forming, in said second resist, a plurality of second resist opening sections for exposing said main conductor layer;

forming second opening sections in regions of said second insulating layer, which covers a top surface of said main conductor layer, by use of said second resist as a photo mask, so that said main conductor layer is exposed therethrough;

forming a metal layer on said main conductor layer in said second opening sections;

removing said second resist; and

forming protrudent electrodes on said metal layer.

15. A manufacturing method of a semiconductor device as set forth in Claim 14, further comprising the steps of:

enlarging said first resist opening sections by carrying out exposure by use of a mask pattern, after the step of forming said main conductor layer; and

forming a barrier metal layer in said enlarged

first resist opening section.

16. A manufacturing method of a semiconductor device as set forth in Claim 14, further comprising the step of:

forming a metal layer on said main conductor layer by electroless plating of a raw material different from said main conductor layer, after the step of removing said foundation metal layer.

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